

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 09/719,424

In response, applicants have amended claim 7 to depend from any one of claims 1 to 4. Each of claims 2 to 4 depends only on claim 1. In view of this amendment, applicants request withdrawal of this rejection.

Claims 2 and 3 have been rejected under the second paragraph of 35 U.S.C. § 112 as indefinite. The Examiner lists four reasons for this rejection. Applicants discuss each reason below.

The Examiner objects to claim 2 as confusing because of its use of the term “rubber-like polymer” in line 4.

In response, applicants have amended claim 2 to delete the term “-like” from the objected to term. Applicants point out that the present specification at page 6 gives examples of the (a-1) polymers, and as can be seen from these polymers, they are rubber polymers.

The Examiner states that in claim 2, lines 10-11, the term “when necessary”, which appears in the next to the last line of the claim, is confusing. The Examiner asks when would the use of a monomer (iii) be necessary, and under what conditions would the use be required.

In response, applicants have amended claim 2 to indicate that the use of monomer (iii) is optional. Thus, the monomer components (a-2) can either be comprised of two monomers or three monomers. See the present specification at page 9, where it is indicated that monomer (iii) can be present in an amount of 0 to 40 wt.%, thereby indicating that it can be present or not be present.

The Examiner states that in claim 3, the word “obtainable” should be replaced with the word --obtained--.

In response, applicants have amended claim 3 in the manner proposed by the Examiner.

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The Examiner states that in claim 3, line 6, the term “nylon mn salt ($m + n \geq 12$)” is confusing because it is not clear why the parentheses is needed. The Examiner suggests that the phrase be rewritten without the parentheses.

In response, applicants have amended claim 3 in the manner proposed by the Examiner.

In view of the above, applicants submit that the claims comply with the requirements of the second paragraph of 35 U.S.C. § 112 and, accordingly, request withdrawal of this rejection.

Claims 1 to 7 have been rejected under 35 U.S.C. § 102(b) as anticipated by JP 04-337334, either alone, or alternatively, in view of the evidence given in U.S. Patent No. 5,534,192 to Incorvia et al.

Applicants first note that applicants believe that the Examiner has mistakenly cited in the statement of this rejection (as well as in other rejections) JP 04-337334. Applicants believe that the correct number that the Examiner intended to recite is JP 04-337344, in view of the Form PTO-1449 that was attached to the Office Action. The following discussions are directed to JP ‘344.

Applicants submit that the present invention, as set forth in claim 1 as amended above, is not disclosed or rendered obvious by the documents cited by the Examiner.

The present invention as set forth in claim 1 as amended above is directed to a resin composition for electrostatic coating comprising components (A) to (D). Applicants have amended claim 1 to incorporate the recitations of claim 5 relating to the alkali metal salt (D) and to further incorporate the proportions of each component, as disclosed at page 24, lines 24 to page 25, line 4.

Thus, claim 1 now recites that at least one alkali metal salt (D) is selected from the group consisting of potassium thiocyanate and an alkali metal salt of dodecylbenzenesulfonic acid.

JP '344 discloses a resin composition comprising a polyetherester amide, a styrene resin, a vinyl polymer containing a functional group, such as carboxyl, etc. and an alkali metal salt. However, JP '344 does not disclose or suggest an alkali metal salt such as "potassium thiocyanate". Applicants enclose herewith a translation of the portion of JP '344 that describes the alkali metal salts that are disclosed in this reference. As is clear from the attached translation, JP '344 teaches that "it is essential to use" an alkali metal salt of an acid selected from the group consisting of silicic acid, titanitic acid, cyanic acid, acetic acid, boric acid, carbonic acid and phosphoric acid, and states that it is difficult to obtain the desired effect of JP '344 if acids other than the acids specified therein are used.

In contrast, in the resin composition for electrostatic coating of the present invention, it is essential to use an alkali metal salt selected from the group consisting of potassium thiocyanate and an alkali metal salt of dodecylbenzenesulfonic acid, as recited in claim 1 as amended above. Such alkali metal salts are not disclosed or suggested in JP '344.

Accordingly, applicants submit that the resin composition set forth in claim 1 is not identical to that of JP '334.

Further, claim 1 relates to a resin composition for electrostatic coating which forms a resin article excellent in electrostatic coatability. JP '344, however, does not disclose or suggest any resin composition suitable for electrostatic coating.

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Therefore, the composition set forth in claim 1 is different from the resin composition of JP '344 in its constituents and use thereof. Accordingly, applicants submit that the present invention as defined in claim 1 is not anticipated by JP '344.

The Examiner asserts that it is well known that antistatic agents are used to enhance the receptivity of surfaces to electrostatically applied coatings, as disclosed in Incorvia et al. The Examiner further states that JP '344 discloses an antistatic resin composition, and concludes that it is clear from the formed article of JP '344 that it is excellent in electrostatic coatability.

Even if such a teaching is found in Incorvia et al, applicants point out that neither JP '344 nor Incorvia et al discloses the necessity of the specific alkali metal salt recited in claim 1, which is an essential component in the composition of claim 1.

Moreover, as discussed in detail below, in connection with the rejection of the claims based on Ueda et al, incorporation of an antistatic agent into any resin composition will not necessarily give a resin composition excellent in electrostatic coatability and various other physical properties. Incorvia et al merely disclose that antistatic agents are used to enhance the receptivity of surfaces to electrostatically applied coatings, but do not teach any conditions to obtain a formed article excellent in electrostatic coatability and various physical properties.

In view of the above, applicants submit that the present invention, as defined in claim 1 as amended above, is neither anticipated nor rendered obvious by JP '344 in view Incorvia et al. Accordingly, applicants request withdrawal of this rejection.

Claims 1 to 4, 6 and 7 have been rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,886,098 to Ueda et al either alone, or alternatively, in view of Incorvia et al.

Applicants submit that these documents do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Ueda et al (U.S. 5,886,098) relate to a resin composition having good antistatic property, heat resistance, etc. and disclose an antistatic resin composition containing a thermoplastic resin, a polyetherester amide and an alkali metal halide. Acrylonitrile/butadiene/styrene copolymers, etc. are disclosed as examples of thermoplastic resins. Further, Ueda et al disclose that the antistatic resin composition can contain a vinyl polymer having a functional group such as a carboxyl group, as a compatibilizer.

In contrast, in the invention of amended claim 1, it is essential to use at least one alkali metal salt selected from the group consisting of potassium thiocyanate and an alkali metal salt of dodecylbenzenesulfonic acid. Such alkali metal salts are not disclosed in Ueda et al. It is thus clear that the invention of amended claim 1 is not anticipated by Ueda et al (U.S. 5,886,098).

Moreover, the Examiner states in Paragraph 11 of the Office Action, in a rejection of claim 5 whose recitations have now been incorporated into claim 1, that Kawakami et al (U.S. 5,574,101), which is drawn to resin composition comprising polyamide, disclose the use of an alkali metal salt such as sodium dodecylbenzenesulfonic acid in order to improve the antistatic effect, and asserts that original claim 5 is obvious over Ueda et al in view of Kawakami et al.

However, Kawakami et al merely disclose that the use of an alkali metal salt improves the antistatic effect, but neither teach nor suggest the electrostatic coatability.

The “electrostatic coatability”, which is a property to be possessed by an article formed from the resin composition of claim 1, means a comprehensive performance for forming a good coating film by the electrostatic coating method. Such properties are achieved not simply by

increasing the electrical conductivity of the resin composition, but by simultaneously providing a sufficient amount of coating applied onto a resin article, good adhesion of the coating and so on. Moreover, as disclosed in the present specification, at page 26, lines 15 to 23, the resin composition of the present invention is excellent in fluidity and moldability. Further, the article formed therefrom is excellent in various physical properties, such as impact resistance and mechanical strength, and also excellent in dimensional stability, appearance and the like. The resin composition of the present invention for electrostatic coating achieves a good balance in such electrostatic coatability and other physical properties by containing the components in the proportions specified in amended claim 1.

However, an article exhibiting a good balance in electrostatic coatability and various physical properties can not be obtained merely by adding a sodium dodecylbenzenesulfonic acid disclosed in Kawakami et al to a resin composition containing a polyamide.

For example, Comparative Example 3 of the present application shows a composition containing a rubber-reinforced aromatic vinyl resin, a polyamide elastomer and a sodium dodecylbenzenesulfonate. This composition does not contain a modified vinyl polymer, which is an essential component of the resin composition of claim 1. As is clear from Table 1, an article formed from such a resin composition exhibits very poor adhesivity of coating and is significantly inferior in electrostatic coatability.

Further, the composition shown in Comparative Example 5 of the present specification contains a rubber-reinforced aromatic vinyl resin, a polyamide elastomer, a modified vinyl polymer and sodium dodecylbenzenesulfonate. This composition does not contain the components in the proportions specified in amended claim 1. As is clear from Table 1, this resin

composition exhibits insufficient fluidity, and an article formed therefrom is significantly inferior in impact resistance and appearance.

On the other hand, compositions shown in Examples 1 to 3 of the present specification contain components (A) to (D) disclosed in claim 1 in the specified proportions. As is clear from Table 1, these compositions are excellent in fluidity and moldability, and articles formed therefrom are excellent in physical properties such as impact resistance, rigidity, etc. and, when electrostatically coated, provide a sufficient amount of electrostatically applied coating and good adhesivity of the coating.

As explained above, in order to obtain an article well-balanced in electrostatic coatability and various other physical properties, it is necessary not only to use a sodium dodecylbenzenesulfonate in a composition containing a polyamide elastomer, but also to use a resin composition containing the components disclosed in claim 1 in the specified proportions.

However, the composition disclosed in Ueda et al does not contain the specific alkali metal salt which is an essential component of the composition of claim 1 of the present invention, and thus, it is clearly different from the composition of the present invention. Moreover, Ueda et al merely disclose an antistatic resin composition, but neither teach nor suggest the essential conditions to form an article excellent in electrostatic coatability and various physical properties. Similarly, Kawamura et al merely disclose that the use of sodium dodecylbenzenesulfonate acid improves the antistatic effect, but neither teach nor suggest the essential conditions to obtain a resin composition for electrostatic coating having well-balanced properties.

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Therefore, a person of ordinary skill in the art is not led to the resin composition of amended claim 1 having the components in the specific amounts recited in claim 1, even when considering Ueda et al (U.S. 5,574,101) and Kawakami et al in combination.

In view of the above, applicants submit that the cited documents do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claims 1 to 4, 6 and 7 have been rejected under 35 U.S.C. § 102(e) as anticipated by U.S. 5,096,995 to Fukumoto et al either alone, or alternatively, in view of Incorvia et al.

Applicants submit that these documents do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Fukumoto et al (U.S. 5,096,995) disclose a resin composition comprising a polyamide elastomer, a graft polymer obtained by polymerizing monomers including styrene, etc., and a modified vinyl type polymer containing at least one functional group. Fukumoto et al further disclose that the antistatic effect can be enhanced by adding a metal salt of a sulfonic acid and the like. In Example 12 of Fukumoto et al, sodium dodecylbenzene-sulfonate is used. However, in Example 12 of Fukumoto et al, sodium dodecylbenzene-sulfonate is employed in an amount of 0.1 parts by weight relative to 100 parts by weight of the other components of the composition.

In amended claim 1 of the present specification, the proportion of the specific alkali metal salt, i.e., component (D), is from 0.2 to 5 wt.% of the resin composition, and this amount is clearly different from that of the sodium dodecylbenzene-sulfonate employed in of Fukumoto et al.

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Moreover, Fukumoto et al disclose a permanently antistatic resin composition, not a resin composition for electrostatic coating.

Therefore, the resin composition of present claim 1 is different from the resin composition of Fukumoto et al in makeup and use. Hence, the invention of present claim 1 is not anticipated by Fukumoto et al.

Also, as explained above, Incorvia et al merely disclose that antistatic agents are used to enhance the receptivity of surfaces to electrostatically applied coatings, but do not teach or suggest the essential conditions to obtain a formed article exhibiting a good balance in electrostatic coatability and various physical properties.

Neither of the cited references, i.e., neither Fukumoto et al nor Incorvia et al, discloses conditions necessary to obtain a composition having excellent electrostatic coatability.

Thus, it is clear that the invention of present claim 1 is not anticipated by or obvious over Fukumoto et al in view of Incorvia et al.

In view of the above, applicants submit that the cited documents do not disclose or render obvious the invention as defined in claim 1 and, accordingly, request withdrawal of this rejection.

Claim 5 has been rejected under 35 U.S.C. § 103(a) as obvious over Ueda et al in view of Kawakami et al.

As discussed above, the recitations of claim 5 have been incorporated into claim 1. Further, applicants have discussed the Kawakami et al reference in connection with the anticipation rejection of claim 1 over Ueda et al.

In view of the above, applicants submit that the rejection of claim 5 is now moot.

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Claim 8 has been rejected under 35 U.S.C. § 103(a) as obvious over JP 04-337344, Ueda et al or Fukumoto et al, each in view of EP 278500 and U.S. Patent No. 5,219,493 to Seshadri.

Applicants submit that these documents do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claim 8 ultimately depends from claim 1 and, accordingly, applicants submit that claim 8 is patentable for the same reasons as discussed above in connection with claim 1.

As discussed above, it is not predictable that an article excellent in electrostatic coatability can be formed from the resin composition of the present invention. Therefore, it is clear that the invention of claim 8, which relates to an article which is produced by electrostatically coating such a resin article, is not anticipated or rendered obvious by the cited references.

In view of the above, applicants request withdrawal of this rejection.

Claims 1, 2 and 4 to 7 have been rejected under 35 U.S.C. § 103(a) as obvious over EP '500 in view of Kawakami et al.

Applicants submit that these references do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

EP 278500 relates to a thermoplastic resin composition comprising polyamide, etc., but nowhere discloses the specific alkali metal salt used in the invention of present claim 1.

The Examiner states that the EP 278500 discloses the use of an antistatic agent, and that Kawakami et al (U.S. 5,574,101), which is drawn to resin composition comprising polyamide, discloses the use of alkali metal salt such as sodium dodecylbenzenesulfonate in order to improve the antistatic effect. The Examiner asserts that, therefore, it would have been obvious to

one of ordinary skill in the art to use an alkali metal salt in the composition of EP 278500 to produce a composition with improved antistatic properties.

However, as explained above, present claim 1 does not merely disclose a composition having an increased electrical conductivity, but a composition which is excellent in moldability and which can form an article excellent in electrostatic coatability and various physical properties.

Kawakami et al merely teach the use of sodium dodecylbenzenesulfonate and the like in order to improve the antistatic effect, but nowhere disclose any conditions to obtain a resin composition for electrostatic coating which is well-balanced in various properties. Likewise, EP 278500 nowhere discloses such conditions.

Therefore, a person of ordinary skill in the art would not be easily led to the invention of present claim 1, even when considering EP 278500 and Kawakami et al in combination.

Further, claims 2 and 4 are dependent on claim 1 and include all the features of claim 1. The invention of claim 1, as explained above, is not anticipated by or obvious over the cited references. Accordingly, applicants submit that claims 2 and 4 are not anticipated by or rendered obvious by the cited references.

In addition, claim 7 relates to a formed resin article excellent in electrostatic coatability, which is formed from the resin composition according to any one of claims 1 to 4.

Claim 8 relates to a formed resin article having an electrostatic coating film, which is produced by electrostatically coating the resin article according to claim 7.

As applicants have explained above, from the cited references, it is not predictable that an article excellent in electrostatic coatability can be formed from the resin composition of the

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present invention. Accordingly, applicants submit that the invention as set forth in claim 7, which relates to an article formed from such a resin composition, and the invention set forth in claim 8, which relates to an article which is produced by electrostatically coating such a resin article, are neither anticipated by nor rendered obvious by the cited documents.

In view of the above, applicants submit that the cited prior art does not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

Claim 8 has been rejected under 35 U.S.C. § 103(a) as obvious over EP '500 in view of Kawakami et al and further in view of Sheshadri.

Applicants submit that these references do not disclose or render obvious the presently claimed invention and, accordingly, request withdrawal of this rejection.

As discussed above, claim 8 depends from claim 1 and, accordingly, applicants submit that it is patentable for the same reasons as discussed above in connection with claim 1.

As discussed above, it is not predictable that an article excellent in electrostatic coatability can be formed from the resin composition of the present invention. Therefore, it is clear that the invention of claim 8, which relates to an article which is produced by electrostatically coating such a resin article, is not anticipated or rendered obvious by the cited references.

In view of the above, applicants submit that the cited prior art does not defeat the patentability of claim 8 and, accordingly, request withdrawal of this rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

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Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,

A handwritten signature in cursive script that reads "Sheldon I. Landsman". The signature is written in dark ink and is positioned above the printed name and registration number.

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 5 and 6 are canceled.

The claims are amended as follows:

1. (Amended) A resin composition for electrostatic coating, comprising 50-90 wt.% of a rubber-reinforced aromatic vinyl resin (A), 5-50 wt.% of a polyamide elastomer (B), 3-20 wt.% of a modified vinyl polymer (C) containing at least one functional group selected from the group consisting of carboxyl, epoxy, amino and amido, and 0.2-5 wt.% of at least one alkali metal salt (D) selected from the group consisting of potassium thiocyanate and an alkali metal salt of dodecylbenzensulfonic acid, based on 100 wt.% of a total amount of four components (A)-(D).
2. (Amended) The resin composition according to claim 1, wherein the rubber-reinforced aromatic vinyl resin (A) is a graft copolymer obtainable by polymerizing monomer components (a-2) in the presence of a [rubber-like] rubber polymer (a-1), or a mixture of said graft copolymer and a copolymer of the monomer components (a-2), the monomer components (a-2) comprising (i) an aromatic vinyl monomer, (ii) at least one monomer selected from the group consisting of a vinyl cyanide monomer and an alkylester monomer of unsaturated carboxylic acid and, optionally [when necessary], (iii) another copolymerizable vinyl monomer.
3. (Amended) The resin composition according to claim 1, wherein the polyamide elastomer (B) is [obtainable] obtained by reacting polyol with at least one compound selected

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from the group consisting of aminocarboxylic acid having not less than 6 atoms, lactam having not less than 6 carbon atoms and nylon mn salt $[(m + n \geq 12)]$ $m + n \geq 12$.

7. (Amended) A formed resin article excellent in electrostatic coatability, which is formed from the resin composition according to any one of claims 1 to 4 [1-6].